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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,476	11/30/2000	Sorcha O'Callaghan	922-117	1685

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EXAMINER

BATES, KEVIN T

ART UNIT	PAPER NUMBER
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2155

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/725,476

Applicant(s)

O'CALLAGHAN ET AL.

Examiner

Kevin Bates

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/7-3-2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The Foreign Priority Documents have been received on November 30, 2000.

The Information Disclosure Statement has been received on September 3, 2001 and has been considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietz (6651099) in view of Asano (6633902).

Regarding claim 1, Dietz discloses that a network unit (Column 8, lines 57 – 61) which includes a look-up engine for performing an address look-up in response to a key including a network address pair in a packet to obtain forwarding data for said packet (Column 12, lines 4 – 11; lines 58 – 60; Column 13, lines 15 – 22; Column 14, lines 9 - 13); means for monitoring conversations defined by network address pairs in packets received by the unit to obtain measures of traffic flow for said conversations (Column 4, lines 48 – 59); a cache memory for storing entries accessible by network address pairs and enabling forwarding data to be obtained for entries in the cache (Column 14, lines 9 – 13); and a cache controller operative: (i) to cause in response to a look-up request a determination whether the address pair in a packet is held in the cache (Column 14, lines 9 – 13) (ii) to allow the look-up engine to perform the address look-up when the

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address pair in said packet is not held in the cache (Column 14, lines 9 – 13), but Dietz does not explicitly indicate that (iii) updating said cache so as to displace entries associated with relatively low measures of traffic flow by entries associated with relatively high measures of traffic flow. Asano teaches of a cache in network node and that the cache's replacement policy includes updating said cache so as to displace entries associated with relatively low measures of traffic flow by entries associated with relatively high measures of traffic flow (Column 2, lines 50 – 65; Column 9, lines 25 – 35). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Asano's teaching of cache replacement in Dietz's system in order to ensure that only the most important records are in cache and to more effectively utilize the cache (Column 1, lines 59 – 67; Column 2, lines 29 – 37).

Regarding claim 2, Dietz in combination with Asano discloses that the cache controller is operative, when the address pair of the packet is not held in the cache, to compare the measure of traffic flow with a threshold and to insert the address pair as a new entry in the cache if the measure exceeds the threshold (Column 9, lines 13 – 24) and is operative when the address pair of the packet is held in the cache to determine whether the said measure exceeds said threshold (Column 8, lines 1 – 8) but Dietz in combination with Asano does not explicitly indicate to increase said threshold. It would have been obvious to one of ordinary skill in the art at the time the invention was made that in order to ensure if you are adding entries into the cache if they are over a threshold and removing entries if they are under a threshold, but have a limited cache as seen in the system in Dietz (Column 24, lines 9 – 22) that the threshold must be

adjusted to make sure that the threshold is a point where there is only the number of entries that can fit in the cache whose traffic is above the threshold and all other flows are lower which would make the most efficient use of the cache (Column 2, lines 29 – 37).

Regarding claim 5, see the rejection to claims 1 and 2.

Claims 3 and 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietz in view of Asano as applied to claims 1, 2, and 5 above, and further in view of Wakeman (5740175) (Applicants IDS).

Regarding claim 3, Dietz in view of Asano teaches removing the entry with a measured traffic flow below a threshold, but it does not explicitly indicate how to handle a fixed length cache and its swap in and out policy. Wakeman teaches a cache for a routing table that uses a least frequency accessed policy when looking to insert a new entry, which is identical to removing the entry with the smallest data flow. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the replacement policy which replaces the item with the least data flow in the system of Dietz in combination with Asano because it helps to further ensure the effective use of cache while dealing with a fixed cache size (Asano, Column 2, lines 29 – 37).

Claims 4 and 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietz in view of Asano as applied to claims 1, 2, and 5 above, and further in view of Walton (EP0551243A2) (Applicants IDS).

Regarding claim 4, Dietz in combination with Asano does not explicitly indicate that said look-up engine is organized to perform a trie search. Walton teaches a routing

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table look-up database that is organized in a trie search (Abstract, lines 4 – 18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Walton's database that is organized in to a trie search in the combination of Dietz and Asano in order to have predictable search time and conserve memory usage (Column 4, lines 7 – 16).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No. 6118760 issued to Zaumen.

U. S. Patent No. 5453979 issued to Schibler.

U. S. Patent No. 6580707 issued to Ikeda.

U. S. Patent No. 6236658 issued to Essbaum.

U. S. Patent No. 6567379 issued to Walkter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (703) 605-0633. The examiner can normally be reached on 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (703) 308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KB

KB
February 18, 2004.


HOSAIN ALAM
SUPERVISORY PATENT EXAMINER